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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/509,715	03/04/2005	Stefan Golz	Le A 35 949	3124

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EXAMINER	
SHAFER, SHULAMITH H	

ART UNIT	PAPER NUMBER
1647	

DATE MAILED: 11/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/509,715	GOLZ ET AL.	
	Examiner	Art Unit	
	Shulamith H. Shafer, Ph.D.	1647	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 September 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Detailed Action

Status of Application, Amendments, And/Or Claims:

Applicants' response, received on 8 September 2006, to Office Action of 13 June 2006 has been entered. Claims 1-11 are pending. Claims 1-3, 5, 6, and 9 have been amended and the amendments made of record. The pertinent remarks/arguments received 13 June 2006 will be responded to herein.

The text of those sections of Title 35 U.S. Code not included in this action can be found in the prior Office action.

Withdrawn Objections/Rejections

Withdrawn Objections:

The objection to the drawings is withdrawn in view of applicants' arguments. The objection to Claim 3 because of informalities is withdrawn in view of applicants' amendment to the claim.

Withdrawn Rejections:

The rejection of Claims 1-11 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention is withdrawn in view of applicants' amendments to the claims.

The rejection of Claims 1-11 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement is withdrawn in view of applicants' amendments to the claims.

The rejection of Claims 1-6 and 8-10 under 35 U.S.C. § 102(b) as being anticipated by Fiore et al. is withdrawn in view of applicants' amendments to the claims.

The rejection of Claims 1 and 11 under 35 U.S.C. § 102(b) as being anticipated by Seo et al is withdrawn in view of applicants' amendments to the claims.

The rejection of Claim 7 under 35 U.S.C. 103(a) as being unpatentable over Fiore et al in view of Ramakrishnan is withdrawn in view of applicants' amendments to the claims.

Maintained/New Objections and/or Rejections

Objections:

The objection to claims 1-3 as encompassing non-elected species is maintained.

***35 U.S.C. § 112, First Paragraph*:**

The rejection of Claims 1-11 under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement is maintained for reasons of record and reasons set forth below.

Applicants traverse the rejection (Remarks of 8 September 2006, last paragraph , page 7, - page 9. The grounds for the rejection are that the Office Action has not met its burden of establishing that a person of ordinary skill the art would doubt that Applicants' asserted utility is true. Applicant's arguments have been fully considered but are not found to be persuasive for the following reasons. The claims were rejected under 35 U.S.C. § 112, First Paragraph (enablement), **not** under 35 U.S.C. § 101 (utility). Applicant has presented n further argument of the rejection under 35 U.S.C. § 112, First Paragraph raised in the previous Office Action. Therefore, the rejection is maintained for reasons of record.

Rejections over prior art:

It is noted that applicants traversed the rejections of Claims 1-6 and 8-10 under 35 U.S.C. § 102(b) as anticipated by Fiore et al. and the rejections of claims 1 and 11 under 35 U.S.C. § 102(b) as anticipated by Seo et al. made in the previous Office Action of 13 June 2006. One of the grounds for traversal is that neither Fiore nor Seo teach involvement of FPRL1 in diseases cited in the preamble of the claims. Applicant's arguments have been fully considered but are not found to be persuasive for the following reasons. The claims are drawn to a method of screening for therapeutic agents useful for treatment of cardiovascular diseases. The intended use of the method steps is recited in the preamble but does not materially limit the method that follows. Therefore, the recited preamble is not given patentable weight. The claims of the instant invention are drawn to method steps comprising contacting a receptor with a test compound, and assaying some biological outcome (binding or activation).

35 U.S.C. § 102

Claims 1, 2, 4, 5 and 10 are rejected under 35 U.S.C. § 102(b) as being anticipated by Gronert et al (1998, J Exp Med. 187:1285-1294). Claims 1 and 2, the independent claims of the instant invention, recite method steps of contacting a test compound with an N-formyl peptide receptor like-1 (FPRL1), now identified as a polypeptide consisting of the amino acid sequence of SEQ ID NO:2 and measuring binding of test compound to the polypeptide or activity of polypeptide.

Gronert et al. teach cloning of the human enterocyte LXA4 receptor protein (identified as FPRL1 in the instant invention, accessible in public databases as NM_001462). The sequence of the LXA4 receptor protein disclosed in the reference has 100% identity to SEQ ID NO:2 of the instant invention (See results in Score, UniProt_7.2 database). Gronert et al. teaches contacting monolayers of T84 cells, which express the LXA4 receptor, with LXA4 (test compound) and measuring inhibition of TNF-α- induced IL-8 release from the cells (page 1289, 1st column, last paragraph,

bridging 2nd column, 1st paragraph and Figure 2). The cells are grown as a monolayer; therefore the polypeptide is attached to a solid support. Absent evidence to the contrary, stimulating a biological activity of the LXA4 receptor by a test compound, would require binding of the test compound to the cognate receptor. Therefore, Gronert et al. anticipate all the limitations of Claims 1, 2, 4, 5, and 10.

35 U.S.C. § 103

Claims 1-6, 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gronert et al in view of Fiore et al (1994, J Exp Med. 180:253-260). The teachings of Gronert et al are reviewed in detail above. Gronert et al. does not teach a) determining the activity of a FPRL1 polypeptide at a certain concentration of a test compound, b) determining the activity of a FPRL1 polypeptide in the presence of a compound know to be a regulator of a FPRL1 polypeptide and c) identifying the test compound as a potential therapeutic agent if activity of the FPRL1 polypeptide is inhibited in the presence of the test compound and the compound known to be a regulator, or contacting wherein the step of contacting is in a cell-free system, or a method wherein the test compound is coupled to a detectable label or wherein the test compound displaces a ligand which is bound to the polypeptide before the step of contacting.

Fiore et al. teach identification of a high affinity LXA4 receptor protein (identified as FPRL1 polypeptide in the instant invention). They teach expression of the receptor in Chinese hamster ovary cells (CHO) (page 254, 1st column, last paragraph) and measure the binding of [^{3}H]LXA4 (labeled ligand or test compound) to intact cell suspensions and subcellular fractions (page 254, 2nd column, 1st paragraph). The reference teaches eicosanoid competition of [^{3}H]LXA4 binding, utilizing different concentrations of test eicosanoid compounds (page 256, table 1).

Therefore, it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to modify the methods of Gronert et al and utilize the CHO cells taught by Fiore et al. transfected with the LXA4R receptor taught by Gronert et al. to measure the binding of [^{3}H]LXA4 (labeled ligand or test compound) to

intact cell suspensions and subcellular fractions and to measure eicosanoid competition of [^{3}H]LXA4 binding. The person of ordinary skill in the art would have been motivated to make that modification because both references teach assays using the FPRL1 receptor, also known as the LXA4 receptor. One would have expected success Gronert et al teach clones comprising cDNA of the LXA4 receptor, and methods of transfecting cells with vectors comprising cDNAs is well known in the art, and both Gronert et al and Fiore et al teach assays utilizing said receptor.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gronert as applied to claim 1 in view of Ramakrishnan (US PGPub 2002/0058259, filed 14 March 2001). The teachings of Gronert et al. are outlined in detail above. Gronert et al. do not teach a method comprising contacting a test compound with a FPRL1 polypeptide and detecting binding of said test compound to said FPRL1 polypeptide wherein said polypeptide is coupled to a detectable label.

Ramakrishnan teaches binding assays comprising contacting a test compound with the binding site of a lipoxin A4 receptor-like polypeptide, a GPCR (paragraph 0149). The reference teaches that in binding assays, either the test compound or the lipoxin A4 receptor-like polypeptide can comprise a detectable label (paragraph 0150). The art teaches that FPLR-1 polypeptides, identified as GPCRs, bind LXA4, and could thus be defined as lipoxin A4 receptor-like polypeptides.

Therefore, it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to utilize the methods of Gronert et al and modify these methods to utilize a receptor polypeptide comprising a detectable label as taught by Ramakrishnan. The person of ordinary skill in the art would have been motivated to make that modification because Ramakrishnan teaches that in binding assays, either the test compound or the lipoxin A4 receptor-like polypeptide can comprise a detectable label. One would have expected success because methods of making proteins comprising detectable labels are well known in the art and disclosed by Ramakrishnan (see for example, paragraphs 104 and 105).

Claims 1 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gronert et al in view of Seo et al (1997, J Immunology 158:1895-1901). The teachings of Gronert et al are reviewed in detail above. Gronert et al. do not teach a method wherein the compound is attached to a solid support.

Seo et al teach binding of a peptide (compound WKYMVm-NH2) immobilized on a biosensor chip to FPRL1 receptor expressed U266 cells.

Therefore, it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to utilize the methods of Gronert et al and modify these methods to utilize a test compound bound to a solid support as taught by Seo et al. The person of ordinary skill in the art would have been motivated to make that modification because both references teach binding of test compounds bind to the FPRL1 receptor. One would have expected success Suo et al teach assays utilizing test compounds immobilized on biosensor chips which bind to FPRL1 receptors on cells.

Conclusion

No claims are allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shulamith H. Shafer, Ph.D. whose telephone number is 571-272-3332. The examiner can normally be reached on Monday through Friday, 8 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brenda Brumback can be reached on 571-272-0961. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SHS

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